

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (Currently Amended) A method for implementing multicast services, comprising:

presetting a mapping relation between address information of [[a]] multicast users address and multicast authorities and a mapping relation between multicast authorities and multicast group addresses in a network equipment, at least one multicast user corresponding to different multicast authorities, at least one multicast authority corresponding to many multicast users;

obtaining a request packet sent by the a multicast user who requests to join in [[the]]a multicast group;

determining address information of the multicast user according to a Virtual Local Area Network identifier (VLAN ID) carried in the request packet and/or a frame number, slot number and port number of the network equipment to which the multicast user is connected;

determining whether the multicast user corresponds to a multicast authority according to the mapping relation between address information of multicast users and multicast authorities;

according to the multicast user address and multicast group address carried in the request packet, determining whether the multicast group address carried in the request packet matches corresponding a multicast group address corresponding to the

multicast authority of the multicast user among the preset-mapping relation between multicast authorities and multicast group addresses; if yes, permitting the multicast user to join in the multicast group, otherwise, ~~rejecting~~ prohibiting the multicast user from joining in the multicast group.

2. (Canceled).

3. (Currently Amended) The method according to claim ~~[[2]]~~ 1, if the multicast group address in the request packet determining that the multicast user does not correspond[[s]] to ~~no~~ any multicast authority, further comprising:

determining whether the multicast user is a super user, if yes, permitting the multicast user to join in the multicast group, otherwise ~~rejecting~~ prohibiting the multicast user from joining in the multicast group.

4-5. (Canceled).

6. (Currently Amended) The method according to claim 1, wherein, the ~~multicast user address~~ information of the multicast user ~~comprises~~ is a frame number, a slot number and a port number of a ~~level~~ layer-2 network equipment to which the multicast user is connected; or

a frame number, a slot number, a port number, a Virtual LAN (VLAN) identifier (VLAN ID), and an IP address of a ~~level~~ layer-3 network equipment to which the multicast user is connected.

7. (Currently Amended) The method according to claim 6, wherein, the ~~level~~layer-2 network equipment is a Digital Subscriber Line (DSL) broadband access equipment or a Local Area Network (LAN) switch~~[[er]]~~;

the ~~level~~layer-3 network equipment is a router or a ~~level~~layer-3 switch~~[[er]]~~.

8. (Currently Amended) The method according to claim 1, wherein, the step of obtaining the request packet sent by the multicast user who requests to join in the multicast group comprises:

snooping the request packet by using an Internet Group Management Protocol (IGMP) technique.

9. (Currently Amended) The method according to claim 1, wherein, the step of obtaining the request packet sent by the multicast user who requests to join in the multicast group comprises:

an IGMP Proxy terminating the request packet and requesting upper-~~level~~-layer network equipment for multicast recourses as a proxy of the multicast user.

10. (Original) The method according to claim 1, wherein, the request packet is based on IGMP.

11. (New) A method for implementing multicast services, comprising:

presetting mapping relations among multicast users, multicast authorities and multicast programs in a network equipment, wherein each multicast authority corresponds to at least one program that each refers to a multicast group address, at least one multicast user corresponds to different multicast authorities, and at least one multicast authority corresponds to many multicast users;

obtaining a request packet carrying a multicast group address from a multicast user who requests to join in a multicast group to utilize a multicast service by way of an Internet Group Management Protocol (IGMP) Snooping technique or IGMP Proxy technique;

determining address information of the multicast user according to the request packet, the address information of the multicast user depending on location information of a connection between the multicast user and the network equipment;

determining whether the multicast user corresponds to a multicast authority according to the mapping relations;

determining whether the multicast group address carried in the request packet matches a multicast group address corresponding to the multicast authority of the multicast user according to the mapping relations;

if the multicast group address carried in the request packet matches a multicast group address corresponding to the multicast authority of the multicast user, permitting the multicast user to use the requested multicast service;

if the multicast group address carried in the request packet does not match a multicast group address corresponding to the multicast authority, prohibiting the multicast user from using the requested multicast service.

12. (New) The method according to claim 11, wherein,

the step of presetting mapping relations among multicast users, multicast authorities and multicast programs in a network equipment comprises: presetting a mapping relation between address information of multicast users and multicast authorities and a mapping relation between multicast authorities and multicast group addresses;

the step of determining whether the multicast user corresponds to a multicast authority according to the mapping relations comprises: determining whether the multicast group address carried in the request packet matches a multicast group address corresponding to the multicast authority of the multicast user among the mapping relation between multicast authorities and multicast group addresses; and

the step of determining whether the multicast group address carried in the request packet matches a multicast group address corresponding to the multicast authority of the multicast user according to the mapping relations comprises: determining whether the multicast group address carried in the request packet matches a multicast group address corresponding to the multicast authority of the multicast user among the mapping relation between multicast authorities and multicast group addresses.

13. (New) The method according to claim 12, wherein the step of determining address information of the multicast user comprises: determining the location information of the multicast user according to a frame number, slot number and port number of the network equipment.

14. (New) The method according to claim 13, wherein the network equipment is a layer-2 network equipment to which the multicast user is connected, and

the step of determining the location information of the multicast user according to a frame number, slot number and port number of the network equipment comprises: determining the address information of the multicast user according to a frame number, a slot number and a port number of a layer-2 network equipment to which the multicast user is connected.

15. (New) The method according to claim 13, wherein the network equipment is a layer-3 network equipment to which the multicast user is connected, and

the step of determining the location information of the multicast user according to a frame number, slot number and port number of the network equipment comprises:

determining the location information of the multicast user according to a frame number, a slot number, a port number, a Virtual LAN identifier (VLAN ID), and an IP address of a layer-3 network equipment to which the multicast user is connected.

16. (New) The method according to claim 12, if determining that the multicast user does not correspond to any multicast authority, further comprising:

determining whether the multicast user is a super user, if yes, permitting the multicast user to join in the multicast group, otherwise prohibiting the multicast user from joining in the multicast group.

17. (New) A network equipment comprising an IGMP Snooping or IGMP proxy, wherein the network equipment is preset mapping relations among multicast users, multicast authorities and multicast programs, wherein, multicast users are identified according to location information of connections between the multicast users and the network equipment, each multicast authority corresponds to at least one multicast program that each refers to a multicast group address, at least one multicast user corresponds to different multicast authorities, and at least one multicast authority corresponds to many multicast users, and

the network equipment is operative to perform the steps:

obtaining a request packet carrying a multicast group address from a multicast user who requests to join in a multicast group to utilize a multicast service by way of an Internet Group Management Protocol (IGMP) Snooping technique or IGMP Proxy technique;

determining address information of the multicast user according to the request packet, the address information of the multicast user depending on location information of a connection between the multicast user and the network equipment;

determining whether the multicast user corresponds to a multicast authority according to the mapping relations;

determining whether the multicast group address carried in the request packet matches a multicast group address corresponding to the multicast authority of the multicast user according to the mapping relations;

if the multicast group address carried in the request packet matches a multicast group address corresponding to the multicast authority of the multicast user, permitting the multicast user to use the requested multicast service;

if the multicast group address carried in the request packet does not match a multicast group address corresponding to the multicast authority of the multicast user, prohibiting the multicast user from using the requested multicast service.

18. (New) The network equipment according to claim 17, wherein the mapping relations comprises a mapping relation between address information of multicast users and multicast authorities and a mapping relation between multicast authorities and multicast group addresses.

19. (New) The network equipment according to claim 18, wherein the address information of the multicast user comprises a Virtual Local Area Network identifiers (VLAN ID) and/or a frame number, slot number and port number of the network equipment to which the multicast user is connected.

20. (New) The network equipment according to claim 19, the network equipment is a Digital Subscriber Line (DSL) broadband access equipment or a Local Area Network (LAN) switch; or a router or a layer-3 switch.